Alison Nicholas
Arkansas Coordinator for Health Information Technology
1401 West Capital, Suite 300
Little Rock, AR 72201
via email: Alison.nicholas@hit.arkansas.gov

Dear Ms. Nicholas

We appreciate this opportunity to respond to the Arkansas State Health Alliance for Records Exchange ("SHARE") request for information ("RFI") regarding health information exchange ("HIE") creation and implementation in the State of Arkansas.

We believe that SHARE is building a statewide HIE on sounds principles. In particular, we agree that the HIE should "improve the health care delivery process in Arkansas by providing information availability when and where it is needed."

In order to create an infrastructure that both improves the health delivery process and is sustainable, Arkansas should design and deploy statewide HIE that delivers high-value services from the start. Accordingly, we believe that SHARE's core infrastructure should include a capacity for advanced clinical decision support; a service that will provide information into an appropriate and actionable clinical context for caregivers and patients and has proven to increase the safety, quality, effectiveness, and efficiency of care.

In response to SHARE's RFI, we offer ActiveHealth's perspective as a firm that has integrated advanced clinical decision support and care management tools within multiple HIEs. For the reasons discussed below, we believe that advanced clinical decision support and analytics capabilities offered through a shared network infrastructure is the most cost-effective mechanism to ensure that Arkansas's providers and hospitals become meaningful users of health information technology.

We would be happy to address any follow-up questions you have.

Sincerely,

Sean O'Donnell
Head of Marketing
Health IT and Provider Solutions

1. Name and Category of Respondent, such as systems integrator, licensee, service provider, hardware vendor, etc.

Since its founding in 1998, ActiveHealth has been a nationally recognized leader in improving the quality, safety and efficiency of care through the development and deployment of highly effective, innovative clinical decision support ("CDS") and related tools that assure the provision of timely information to providers at the point of care and to patients to manage their health.

2. Name of Vendor Representative responsible for any future business opportunity with the State of Arkansas. Include contact information. General vendor background and corporate information is not required, but may be included in the Addenda.

Our contact information is:

> Contact Name: Eric Daigle
> Company Name: ActiveHealth Management
> Mailing address: 102 Madison Avenue
> Telephone: (202) 590-2636
> Email address: edaigle@ActiveHealth.net

ActiveHealth was established in 1998 by Lonny Reisman, MD, a cardiologist and a consultant for clients seeking to address rising healthcare costs and improve medical outcomes. Dr. Reisman's vision was to take clinical information from available administrative data, aggregate that data for each member, and apply rules drawn from the medical literature to identify members whose care could be improved.

This vision evolved into the CareEngine® System, which is the gold standard for identifying preventable gaps in care. It was the first tool to target both providers and patients with valuable gap in care alerts to improve best practices, and has been rigorously redesigned throughout the last ten years to effectively integrate with a range of managed care products. The CareEngine continuously scans for over 1,000 gaps in care across 200 conditions for over 19 million people. Our physician and member messaging tools increase compliance for recommendations because they are based on the latest medical information, are available through a wide variety of mediums, are tailored to each audience, and provide a valuable feedback loop.

To identify additions and changes in evidence-based recommendations, 20 full-time clinicians (including 15 Doctors, two Pharmacists and three nurses) in a wide range of specialties have, as their primary roles, review continually the first-line North American and European journals, specialty society guidelines and FDA communications. On a weekly basis, this group meets to continuously extract new evidence-based information for the development of our messaging.

In May of 2005, ActiveHealth was acquired by Aetna, Inc. and is a wholly-owned, independent subsidiary of Aetna, Inc. One hundred percent of the issued and outstanding capital stock of ActiveHealth Management, Inc. is owned by Aetna, Inc. However, ActiveHealth operates as a

branded, stand-alone business. ActiveHealth owns 100 percent of the issued and outstanding capital stock of Health Data & Management Solutions, Inc. ("HDMS"), its data analysis division. Acquired in 2001, HDMS operates as a division of ActiveHealth, and not as a separate operating entity.

Our primary goal is to grow and expand our business across all segments including providers, health information exchange organizations, health plans, self-insured employers, unions, state health plans, Medicaid and government agencies. Since being purchased by Aetna in May 2005, ActiveHealth has continued to expand significantly, reflecting strong demand for its suite of care coordination tools including clinical decision support systems, registry tools, quality measurement and reporting and disease management, case management, utilization management, and wellness programs to address the increasing costs of health care.

Leading health information, standards-setting and quality organizations, health plans and plan sponsors, hospitals and provider groups turn to ActiveHealth for the gold standard in clinical intelligence solutions and services. Across all sectors, the total population covered by the CareEngine exceeds 19 million lives with 77 direct employer clients, 19 health plan clients, 10 public sector clients including six state health plan employer groups and three Medicaid clients, five TPAs, one provider group, and one hospital system. Two additional state health plan employer groups will go live during 2010. In Arkansas, ActiveHealth delivered 72,000 care considerations to physicians in 2008.

3. Summary Description of Solution, limited to three pages.

The most cost effective approach for providing CDS and analytics is to integrate decision support as a service within an exchange's infrastructure. We believe that quality efforts will fall short of clinical goals if we simply automate physician practices with current electronic health records ("EHRs") that lack advanced decision support analytics. Connectivity to "smart networks" or a "health intelligence exchange" that can apply clinical analytics and put information into an appropriate and actionable clinical context for physicians is an optimal path to realizing the value we all want in our healthcare system.

As opposed to relying on decision tools embedded within EHRs, we believe that provision of clinical analytics through a network: (1) creates opportunities for innovation and lower cost solutions, (2) supports the federal goals and flexibility of modular certified EHR technology, and (3) reflects market experience with alternative delivery mechanisms for CDS that yield demonstrable improvements in the quality, safety and efficiency of care.

While EHRs provide a necessary and important foundation for clinical documentation, they have been found to have limited ability to ability to coordinate care and support effective care management.[1] To a large extent, EHRs limitations are due to decision support systems that rely on data collected within the institution and have limited capabilities to communicate with

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[1] "Are Electronic Medical Records (EMRs) Helpful for Care Coordination? Experiences of Physician Practices," *Journal of General Internal Medicine*, December 22, 2009.

external systems and incorporate data from multiple sources (e.g., clinical data from another EHR system, claims data, PBM data, laboratory data, patient-derived data from a personal health record or disease management system). Therefore, EHRs fail to collect, analyze and utilize information across the spectrum of that patient's encounters or condition.

With demonstrable success in terms of improvement in the quality and efficiency of care, employers and health insurance companies have deployed robust clinical decision support capabilities and other clinical informatics services across a community of providers. This approach is now being employed by a number of HIEs and integrated provider delivery systems across the country.

ActiveHealth's portfolio of health IT and HIE capabilities support care coordination, wellness and prevention, and outcome improvement. ActiveHealth brings a comprehensive set of products and integration solutions, all supported by the core ActiveHealth CareEngine Clinical Decision Support underpinning. Our ability to rapidly integrate applications, data and services allow for quick implementation and mass reach of our tools across the community.

In support of local, regional, and statewide HIE, ActiveHealth leverages the following:

- **CareEngine™ - Advanced Clinical Decision Support and Alerts**: ActiveHealth's patented CDS system, CareEngine®, is maintained and regularly updated by a team of physicians to assure it incorporates the latest evidence-based clinical protocols and utilizes all available patient-specific and population-based clinical data. It does its analysis in real time, using a deep set of algorithms to compare patient data against evidence-based medical knowledge. In addition to alerting the physician to any discrepancies, CareEngine also effectively supports the care team's patient engagement strategy by delivering alerts to a patient's personal health record ("PHR"). Along with an aggregated patient medical record drawing on data sources connected to the HIE which is crucial to the success of the Patient Centered Medical Home ("PCMH") model, ActiveHealth's CareEngine continually catalogs the most recent evidence based medical literature to develop best practices for clinical predictive modeling and clinical decision support. CareEngine compares these best practices to the patient medical record to identify gaps or oversights in care. These gaps in care are then communicated to physicians and patients through a provider registries, portals, EMRs, PHRs and mail.

  ActiveHealth accepts, integrates and utilizes medical (diagnoses and procedures) and pharmacy claims data, lab claims and results, biometric data, and health assessment data in its clinical predictive model to identify and stratify patients into various risk categories for the population management program. Patients who are stratified as moderate to high risk are targeted for telephonic nurse engagement and receive progressive engagement and outreach. When members have acute issues and care coordination services are required, we support the member through case management interventions. Studies published in peer reviewed medical journals have shown that CareEngine improves quality and produces significant health economic value. Equally important for providers is the accuracy of a clinical decision support system where systems that deliver a large number of inaccurate

alerts get ignored. A comparison of CareEngine alerts against information in patients' charts yielded a clinical accuracy rate of 98 percent.

- *Integrated Registries and CareTeam Workflow Portals*: ActiveHealth provides an on-demand physician registry and portal that is web-enabled. The registry provides an on-demand feedback and communication loop for physicians, regarding patients within their practice. Patients with validated conditions are listed, allowing drill down viewing into an individual patient profile. Physicians are also able to view gaps in care detected by the CareEngine, the conditions validated by the clinical predictive model, as well as participation in programs managed through ActiveHealth or the PCMH. This allows physicians to see what interventions are required according to evidence based protocols. ActiveHealth also provides a simple application for physician extenders to conduct interventions. Our tools display disease management and case management applications to be utilized by physicians, physician extenders or by our Nurses with or without an EMR. This allows all data to be aggregated for reporting whether it is at the vendor level or PCMH level. In all instances the data continues to be collected and informs the next best step for evidence based interventions.

- *My ActiveHealth PHR Portal*: Fully integrated with its clinical decision support application, alerts can be delivered in the PHR both from historical data and in real time (when the user supplies new relevant data). Because these alerts (Care Considerations) are sent by the CareEngine, they embody a superior level of evidence and specificity. ActiveHealth's internal analysis shows a substantial increase in alerts generated via self-reported data from its PHR users. The user can provide feedback on the alert right in the PHR, thus improving the alerts' accuracy (e.g., by stating that the member is allergic or was told not to use the recommended medication, or that they already are taking the medication but using a pharmacy that does not submit claims). My ActiveHealth PHR portal will also include access to disease management and lifestyle coaching content, goals, schedules and other information that may be provided by the PCMH or other program sponsor (such as an employer). Outcomes are also improved via "trackers" (e.g., for BMI, blood pressure, exercise, and LDL level) and context-sensitive educational materials are readily available in the My ActiveHealth PHR Portal.

- *Quality Measure Reporting*: ActiveHealth provides quality performance measures for physicians as an accompaniment to the registry. The Active Performance Measures program provides a quantitative assessment of the quality of care across networks and physicians compared to evidence-based standards.

4. List of Current Installed Locations for the recommended solution.

Below is a list of locations where advanced CDS has been installed.

Vanderbilt University. At Vanderbilt University in Nashville, Tennessee, alerts from an advanced CDS are combined with the clinical data within their EMR system and then integrated into their electronic messaging and workflow across their clinical provider teams (including nurse intermediaries and physicians). Since the implementation of this model, Vanderbilt has improved compliance to evidence-based care considerations among its physicians by 14.3% (p<0.002) and have realized lower costs for the Vanderbilt practice.

Brooklyn Healthcare Information Exchange (BHIX). In Brooklyn New York, the Brooklyn Healthcare Information Exchange ("BHIX") and the provider groups affiliated with the Maimonides Hospital are deploying an HIE-based advanced CDS for the patient population in the Brooklyn, which is fueling a PHR, EHRs, and a BHIX portal for those not using stand-alone EHRs. In addition, they will be using the technology to deploy an Advanced Medical Home model for selected high-cost chronic patient populations. Eventually, the BHIX HIE-based CDS implementation will be consumed by other sub networks as part of the Statewide Health Information Network for New York as a shared service to maximize the opportunity for all providers across the state to benefit from CDS in the most efficient and scalable fashion.

CareSpark. ActiveHealth also works closely with CareSpark, a non-profit regional HIE working to improve health in a 34 county area of east Tennessee and southwest Virginia through the collaborative sharing of HIE. Since its inception in 2005, CareSpark has partnered with local healthcare providers, purchasers, technology companies and policy-makers at federal and state levels to develop a sustainable system and secure network that supports patient care delivery, public health research and population health improvement. With CareSpark, ActiveHealth executed the following data sharing arrangements:

- C-Health
- Cardiovascular Associates
- Clinch River Health Service
- Cumberland Plateau Health District
- Frontier Health
- Holston Medical Group
- Mountain States Health Alliance
- Southeastern Pain Management Center
- Southwest Virginia Community Health System
- Sullivan County Regional Health Department
- UnitedHealthcare
- Wellmont Health System

CareSpark develops and operates a secure network that allows physician offices, hospitals, public health departments, pharmacies, laboratories, and imaging centers to

communicate electronically in order to improve patient care and safety and reduce costs. The network supports programs for medication management, diagnostic services, preventative medicine, and disease management, supported by technology, training, clinical process improvement, and incentives.

Other systems that have recently begun to deploy ActiveHealth's advanced CDS as a network service include:
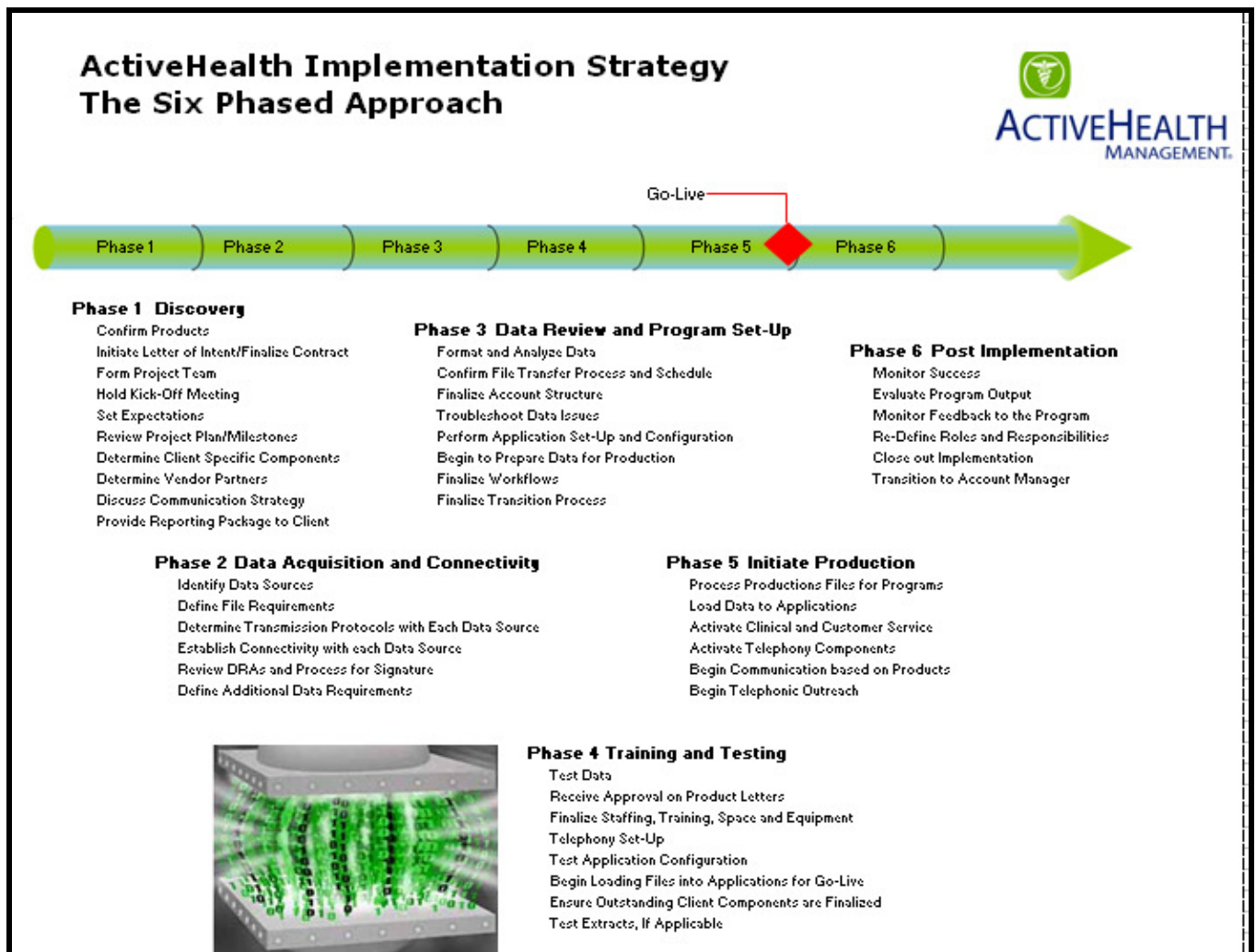
- The Adirondacks HIE where ActiveHealth will provide PCMH and PHR connectivity for a catchment area of over 175,000 individuals and 1,000 physicians.

- A large San Diego-based multi-specialty IPA (over 600 physicians), where ActiveHealth, in partnership with IBM, will implement an IPA specific HIE deploying the Active Registry tool to facilitate clinician NCQA level 3 certification for PCMH.

5. Estimate of implementation timeline: Pilot project and broader installation.

Based on the implementation plan and product mix that is being implemented, ActiveHealth typically utilizes a 30-day time frame for initial design and project planning.

The level of client involvement in the implementation of our products and services is dependent on the amount of time the client resources have available. We have worked with a variety of clients that been involved in different ways. Some clients are heavily involved based on their staffing model and oversight goals and some have limited resources and are only able to assist with items that require their attention.

Our implementation approach is flexible, and we can tailor our approach based on the resources that the organization has available. ActiveHealth employs a six-phased implementation approach:

ActiveHealth Implementation Strategy
The Six Phased Approach

ACTIVEHEALTH MANAGEMENT.

Go-Live

Phase 1 | Phase 2 | Phase 3 | Phase 4 | Phase 5 | Phase 6

Phase 1 Discovery
Confirm Products
Initiate Letter of Intent/Finalize Contract
Form Project Team
Hold Kick-Off Meeting
Set Expectations
Review Project Plan/Milestones
Determine Client Specific Components
Determine Vendor Partners
Discuss Communication Strategy
Provide Reporting Package to Client

Phase 2 Data Acquisition and Connectivity
Identify Data Sources
Define File Requirements
Determine Transmission Protocols with Each Data Source
Establish Connectivity with each Data Source
Review DRAs and Process for Signature
Define Additional Data Requirements

Phase 3 Data Review and Program Set-Up
Format and Analyze Data
Confirm File Transfer Process and Schedule
Finalize Account Structure
Troubleshoot Data Issues
Perform Application Set-Up and Configuration
Begin to Prepare Data for Production
Finalize Workflows
Finalize Transition Process

Phase 4 Training and Testing
Test Data
Receive Approval on Product Letters
Finalize Staffing, Training, Space and Equipment
Telephony Set-Up
Test Application Configuration
Begin Loading Files into Applications for Go-Live
Ensure Outstanding Client Components are Finalized
Test Extracts, If Applicable

Phase 5 Initiate Production
Process Productions Files for Programs
Load Data to Applications
Activate Clinical and Customer Service
Activate Telephony Components
Begin Communication based on Products
Begin Telephonic Outreach

Phase 6 Post Implementation
Monitor Success
Evaluate Program Output
Monitor Feedback to the Program
Re-Define Roles and Responsibilities
Close out Implementation
Transition to Account Manager

Phase 1: Discovery

Discovery is where we conduct a deep dive into the resources, landscape, consent rules, data sources, define requirements and business rules and map out workflows. Typically a 30 -day time frame.

Phase 2: Data Acquisition & Connectivity

Design is where we draft our project charter, project milestones, timeline and plan. We design the proposed workflows and present our go live plan to the client. Additionally, we scope out the internal system set up requirements and begin the process for procuring data and understand what data is available and what codes are being sent. Typically a 30-day time frame.

Phase 3: Implementation

Implementation is where we focus on the end to end steps required to bring our services live. The implementation phase is broken out into different steps:
- Data Acquisition-this includes connectivity to all data sources, data mapping, data scrubbing
- HIE Connectivity- connect to the HIE and receive and send data and consents accordingly.
- Application and System Set up-includes consent rules are in place, business rules are defined, and systems are set up to support account operations. This includes a clear understanding of the use and deployment of ActiveCareTeam Suite.
- Help Desk and Support Set up-understand service level support requirements, telephone set up, support set up
- Clinical Workflow-define use of ActiveCareTeam, clinical decision support education and training. Typical 60-day timeline.

Phase 4: Training & Testing

Training and Testing includes communication and training for client and system users. We educate users on the Clinical Decision Support and other tools used to access the Clinical Decision Support and the workflow processes to utilize the Clinical Decision Support. We educate on the help desk support process. During this phase we also ensure that we are ready for go live by running comprehensive end to end testing. This runs concurrently with phase 3 with 30 days added on.

Phase 5: Initiate Production

Production consists the components necessary includes *go live*. We activate all levels of data integration and run clinical rules engine for clinical decision support.

Phase 6: Post Implementation

Prost production is Customer Support and Production and includes the continual review and monitoring of the program, evaluating the output, feedback and acceptance. We continue to ensure that value for the client, and support the continued success of the program. We work in consultation with our clients to ensure effectiveness of tools and resources and ensure program is sustainable.

The most significant challenge to successful implementation is the timely integration of data. ActiveHealth works with HIE stakeholders as appropriate to create timely data transfers. ActiveHealth has successfully implemented hundreds of data feeds from multiple sources and can create the required data feeds up to a frequency of daily when the HIE data source has the capacity to do so.

The implementation team is comprised of the following designated resources:

- Project Executive-responsible for the relationship, business requirements and overall success.
- Project Manager-responsible for the implementation tasks and deliverable and management of the project. Responsible for pulling together the project charter, timeline, plan and resources
- Technical Lead-responsible for the HIE connectivity, applications set up and testing
- Data lead-responsible for the acquisition and procurement of data and mapping
- Clinical lead-responsible for the workflow design and training of the clinical decision support
- Communications lead-responsible for the market and user communication strategy
- Operations lead-responsible for the help desk set up and operational set up requirements. Training and ongoing support.

The implementation lead and account manager will oversee the account team to ensure that all tasks are on track and provide status updates directly to the client. They will monitor the implementations progression against the milestones and established critical paths. During the weekly internal and external implementation meetings, the risks and barriers are identified and mitigation strategies are determined. This oversight and approach allows us to ensure that the project stays on track in order to meet the required launch date.

6. Description of the Financial Business Models supported.

Financing of HIE has been and remains an ongoing challenge. In order to create and sustain demand for HIE services among healthcare stakeholders, statewide HIEs must supply services that demonstrably improve the quality and efficiency of care and deliver them in a flexible, cost-effective manner.

Advanced CDS services have been proven to provide value through improved quality outcomes and cost savings. ActiveHealth's advanced level of CDS functionality has undergone rigorous assessment of its effectiveness. In 2005, the results of a randomized, controlled clinical study using advanced CDS was published in the *American Journal of Managed Care*.[2] Advanced CDS was used to assess and analyze complete patient data profiles for those in the study group and then produce care considerations for their physicians when gaps or issues in care were identified. The use of the technology and the subsequent actions on the care alerts by their physicians produced a reduction in patient hospitalizations of 8% and a savings in charges of more than $8.07 per member, per month ("PMPM").

In 2008 a follow up study found that the use of advanced CDS with care alerts reduced the average PMPM charges (vs. paid claims) in the treatment group by $21.92 (6.1%) vs. control group.[3] Additional studies on the efficacy of this community based care coordination and clinical decision support model and the impact to population based outcomes are provided in Attachment A.

Offered as a network service, the value of ActiveHealth's advanced CDS and analytic tools can flow to:

- *Insurers, Medicaid and State Employee Health Plans*: State and private payers for health services are increasingly realigning payment models to emphasize and reward quality outcomes vs. a volume driven fee-service approach. Payers are more likely to pay for the provision of value added functions provided by an HIE on a shared service basis because they (a) assist in optimizing the quality gains necessary to optimize reimbursement and (b) cost less as a shared service than purchasing and implementing office-based software.

- *Public Health*: Advanced CDS can provide de-identified point-of-care metrics and supporting analytic capabilities to develop robust population health metrics and management tools.

For an HIE, ActiveHealth provides a flexible pricing structure which allows its HIE clients to calibrate participation charges and create a revenue stream that sustains the HIE effort.

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[2] *The American Journal of Managed Care*, "Using a Claims Data–Based Sentinel System to Improve Compliance With Clinical Guidelines: Results of a Randomized Prospective Study," 2005;11:93-102.

[3] *The Journal of Health Economics*, "Information Technology and Medical Missteps: Evidence From a Randomized Trial," 2008; 585–60.

7. Suggested Service Level Agreement terms.

1.0   Specific service level agreements are determined based on a deeper understanding of the overall specification process. However, as an operating guideline, 95% of web services received and processed by ActiveHealth are committed to perform in 5-7 seconds.

- In regard to performance profiles to be assigned to web service transaction types:
- Document retrieval transactions executed against ActiveHealth are expected to be very efficient – i.e., consistent operation in 5-7 seconds.
- Some stress on web service performance is expected in cases where HIE submits large data payloads to ActiveHealth.
- CareEngine analysis of large payloads may be extended beyond 7 seconds although it should be noted this is typically a background transaction that does not affect online user experience
- PHR retrieval and processing of clinical data from HIE at time of user registration may exceed 7 seconds in the event of a large data payload.

2.0   In the event that ActiveHealth receives anomalous transaction content from HIE, or HIE electronic services fail to respond to transactions due to connectivity issues or similar, Active will advise HIE in a timely fashion. ActiveHealth and HIE will work together to resolve identified problems and prevent their reoccurrence.

3.0   ActiveHealth and the HIE will work together to predict and respond to system capacity growth requirements as related to transaction volume.

4.0   System Up time:
    4.1   It is projected that the HIE messaging platform will be available 99.90 percent of the time or more following system stabilization.
    4.2   CE, ODS, PHR and Active Advice undergo periodic deployments of new functionality required by their various stakeholders on a quarterly basis.   These releases typically occur over weekends and evenings and usually last three to twelve hours. The availability of technical services to HIE during these deployments may be affected.

5.0   Average system response time of the HIE Framework to user data requests is 5-7 seconds.

6.0   ActiveHealth's database is backed up continuously by transaction logging, supplemented by periodic database dumps. All backups are stored in a different physical location than the production data center providing up to the minute recovery capability for outages from the simple device failure to outages at the level of natural disaster.
    6.1   Oracle databases are backed up incrementally on a nightly basis, and in full on a weekly basis.
    6.2   SQL Server databases are backed up fully every 2 days.
    6.3   In the event that ActiveHealth's production data center is destroyed or undergoes other unplanned deactivation, ActiveHealth will be able to re-establish all

production technology operations in the ActiveHealth disaster recovery center in less than three days.

8. Estimated Cost of Solution Components, including license fees, third-party license fees, hardware (server and storage), and recurring maintenance fees.

Estimated costs can be provided based upon forecasted number of providers consuming ActiveHealth's HIE services. ActiveHealth employs a software as a service pricing model, where products and services are charged on a per provider per month basis. We remain flexible based on discounts for volume and the length and terms of the contract.

Attachment A: Published Studies on the Efficacy of ActiveHealth Products

Published studies on the efficacy of ActiveHealth's community based care coordination and CDS model and the impact to population based outcomes is provided below.

Research Topic	Finding	Research Study Reference
Provider Alerting	8.4% fewer hospitalizations $8.07 PMPM paid claims savings	Javitt JC, et al. Using a Claims Data-based, Sentinel System to Improve Compliance with Clinical Guidelines: Results of a Randomized Prospective Study. Am J Manag Care 2005;11:93-102.
Provider Alerting	6% lower overall charges $21 PMPM charge savings	Javitt JC, Rebitzer JB, Reisman L. Information technology and medical missteps: Evidence from a randomized trial. J Health Econ 2008;27(3):585-602.
Cardiovascular Alerts	HOPE study alerts deliver $510 PMPM savings for alerted	Javitt JC, et al. Claims-Based Reminder System Improves Compliance with HOPE Trial Recommendations, Decreases Cardiovascular Hospitalizations, and Reduces Costs. Amer Heart Assoc Annu Sci Sess 2004:P245.
Alert Accuracy & Validity	Alerts 82% accurate compared to actual patient charts	Wei H, et al. Clinical Validity of Alerts Generated by the CareEngine Claims-Driven Decision Support Engine. AMIA Annu Symp Proc. 2008 Nov 6:1171.
Patient Alerting	12.5% incremental boost in overall compliance	Rosenberg S, et al. Supporting the Patient's Role in Guidance Compliance: A Controlled Study. Am J Manag Care 2008;14:737-744.
Nurse Engagement	80% more alerts identified 21% increase in compliance	Juster IA, et al. Technology-Driven Interactive Care Management Identifies and Resolves More Clinical Issues than a Claims-Based Alerting System. Dis Manag 2005;8:188-197.
Kidney Guideline Alerts	K/DOQI kidney guidelines alerts improves compliance 30%	Halevy D, Juster I. Implementation of the K/DOQI Guidelines Using a Clinical Reminder System. Nat Kid Found Spring Clin Meeting 2006.
Kidney - Bone Guideline Alerts	CKD bone disease alerting boosts compliance 40-47%	Halevy D. Use of a Clinical Alert and Reminder System to Promote K/DOQI Bone Guideline Implementation. Am J Kid Dis 2007;49(4):B44.
Osteoporosis Guideline Alerts	Osteoporosis alerts improve compliance 7-23%	Sharma A, et al. Use of a Clinical Alert System to Promote Implementation of Osteoporosis Guidelines. Nat Osteoporosis Found Internet Symp 2007.
Value-Based Formulary	7-14% increase in medication adherence	Chernew M,et al. Impact of Decreasing Copayments on Medication Adherence within a Disease Management Environment. Health Affairs 2008; 27(1):103-112.
Value-Based Formulary	No overall increase in cost	Chernew M, et al. The Financial Effects of a Balue Based Insurance Design Program. Health Affairs January 2010, in press.
Mental Health	Bipolar disorder predicted with high sensitivity and specificity	Juster IA, et al. Use of Administrative Data to Identify Health Plan Members With Unrecognized Bipolar Disorder: A Retrospective Cohort Study. Am J Manag Care 2005;11:578-584.